

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
7 April 2005 (07.04.2005)

PCT

(10) International Publication Number
WO 2005/032085 A1

(51) International Patent Classification⁷: H04L 25/06,
27/38

(21) International Application Number:
PCT/JP2004/014423

(22) International Filing Date:
24 September 2004 (24.09.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2003905272 26 September 2003 (26.09.2003) AU
2004212605 20 September 2004 (20.09.2004) AU

(71) Applicant (for all designated States except US): NEC
CORPORATION [JP/JP]; 7-1, Shiba 5-chome, Mi-
nato-ku, Tokyo 1088001 (JP).

(72) Inventor; and
(75) Inventor/Applicant (for US only): BUI, Thanh, Ngoc
[VN/AU]; 6/28, Shepparson Avenue, Carnegie, Victoria,
3163 (AU).

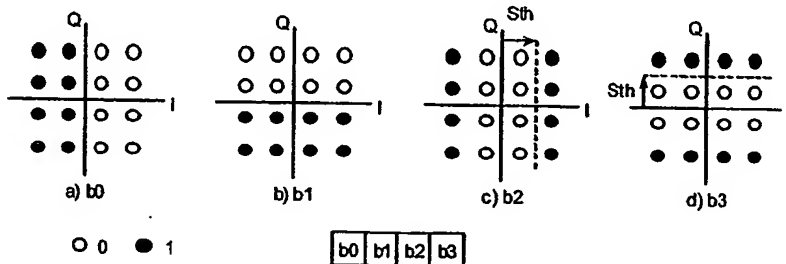
(74) Agents: MIYAZAKI, Teruo et al.; 8th Floor, 16th Kowa
Bldg., 9-20, Akasaka 1-chome, Minato-ku, Tokyo 1070052
(JP).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

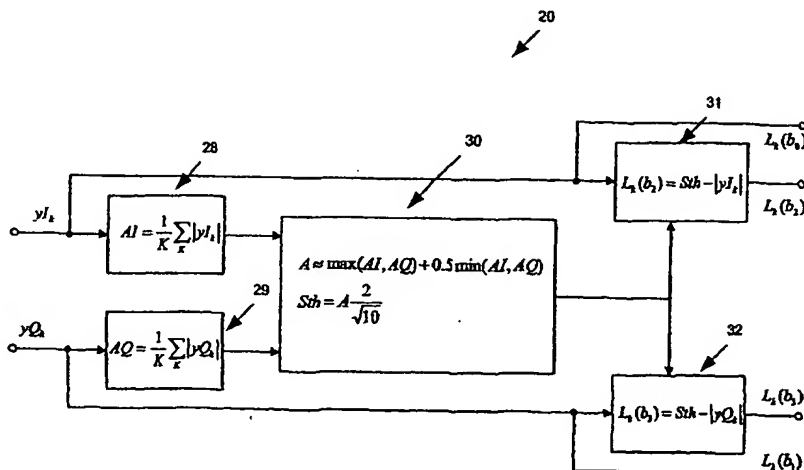
(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,

[Continued on next page]

(54) Title: COMPUTATION OF SOFT BITS FOR A TURBO DECODER IN A COMMUNICATION RECEIVER



(57) Abstract: A device (20) for computing a threshold S_{th} used in demodulating a quadrature amplitude modulated (QAM) signal to generate a plurality of soft bits per received symbol for input to a turbo decoder, the device including: means (30) for computing the mean amplitude A of the received symbols and multiplying the mean amplitude A by of the received symbols and multiplying the mean amplitude A by a constant C_i for a square QAM constellation with 4^m points, such that $S_{th_i} = A \times C_i$ where m is a positive integer and i is a positive integer from 1 to $(\sqrt{4^m}-1)$.





GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Best Available Copy